

Appl. No. 10/696,715
Amdt. Dated 7/13/2006
Response to Office action dated 04/26/2006

REMARKS

Claims 1 and 15 have been amended. Claims 4, 7, 9, 11, 12 and 14 have been cancelled. No new matter has been added. Claims 1-3, 5-6, 8, 10, 13 and 15-16 are pending.

Disclaimers Relating to Claim Interpretation and Prosecution History Estoppel

Claims 1 and 15 have been amended, and claims 4, 7, 9, 11, 12 and 14 have been canceled, notwithstanding the belief that these claims were allowable. Except as specifically admitted below, no claim elements have been narrowed. Rather, cosmetic amendments have been made to the claims and to broaden them in view of the cited art. Claims 1 and 15 have been amended solely for the purpose of expediting the patent application process, and the amendments were not necessary for patentability.

Any reference herein to “the invention” is intended to refer to the specific claim or claims being addressed herein. The claims of this application are intended to stand on their own and are not to be read in light of the prosecution history of any related or unrelated patent or patent application. Furthermore, no arguments in any prosecution history relate to any claim in this application, except for arguments specifically directed to the claim.

Claim Rejections - 35 USC § 102

The Examiner rejected claims 1-3, 5-6, 8, 10, 13 and 15-16 under 35 USC § 102(b) as anticipated by Makhija (USP 6,037,778). This rejection is respectfully traversed.

Makhija discloses a battery tester device 20. The device 20 comprises a first resistor R1 connected to a first switch 34 in series and a second resistor R2 connected to a second switch 38 in series, wherein the resistors R1, R2 are connected in parallel to a battery 22. Further, the device 20 comprises a microprocessor 24 that controls the switches 34, 38. In the device 20, microprocessor 24 determines the condition of the battery 22 based on the recovery voltage wave form after changing the switches 34, 38 from ON to OFF. To be more precise, the condition of the battery 22 is

determined based on the voltage of the battery 22 measured at a specified period of time, for example, ten seconds after the switches 34, 38 are turned off.

Claim 1:

Claim 1 recites, among other limitations: “a voltage recovery time measurement section for measuring a time period from a time when said switching element is turned off to a time when the voltage of the battery detected by said battery voltage detecting section recovers to a predetermined voltage value” and “wherein the information relating to the change is said time period measured by said voltage recovery time measurement section.” The Examiner asserted that this limitation is disclosed at 8:21-60.

However, Makhija, at FIG. 4 and 8:21-60, discloses that the battery tester device 20 detects the voltage of the battery 22 at a specified period of time, ten seconds after the switches 34, 38 are turned off. In other words, the time period measured by Makhija’s battery tester device 20 is fixed and the voltage of the battery 22 detected by the battery tester device 20 changes according to the condition of the battery 22.

In contrast, the voltage recovery time measurement section, as claimed, measures a time period from when the switching element was turned off to when the voltage of the battery recovers to a predetermined level. This means that the time period measured by the voltage recovery time measurement section, as claimed, changes according to the residual capacity of the battery.

Since Makhija does not disclose, either expressly or inherently, the limitations “a voltage recovery time measurement section for measuring a time period from a time when said switching element is turned off to a time when the voltage of the battery detected by said battery voltage detecting section recovers to a predetermined voltage value” and “wherein the information relating to the change is said time period measured by said voltage recovery time measurement section”, Makhija does not anticipate claim 1.

By virtue of their dependence from claim 1, claims 2-3, 5-6, 8, 10, 13 and 15-16 are not anticipated by Makhija.

Claim 5:

Claim 5 recites, among other features:

a storing section for storing characteristics information of relation between the information relating to the change and said residual capacity of said battery,

wherein said battery controlling section refers to said characteristic information in said storing section to determine the residual capacity of said battery based on the information relating to the change.

The Examiner asserted that Mikhija discloses this limitation at FIG 6 and 5:18-66.

However, Makhija, at 5:18-66, discloses that the microprocessor 24 determines the condition of the battery 22 based on the change between the voltage of the battery 22 when the first switch 34 is OFF and that when the first switch 34 is ON. Mkhija does not disclose that to determine the residual capacity, the microprocessor 24 refers to a storing section that stores information of relation between the time period measured by the microprocessor 24 and the residual capacity of the battery 22.

In contrast, the storing section, as claimed, stores information of relation between the time period measured by the voltage recovery time measurement section and the residual capacity of the battery. The battery controlling section, as claimed, determines the residual capacity of the battery by referring to the information stored in the storing section (see FIG. 4 and ¶ [0034] of the Specification). Accordingly, the battery control circuit of the present invention can be applied to various batteries by changing the information stored in the storing section.

Since Makhija does not disclose, either expressly or inherently,

a storing section for storing characteristics information of relation between the information relating to the change and said residual capacity of said battery,

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wherein said battery controlling section refers to said characteristic information in said storing section to determine the residual capacity of said battery based on the information relating to the change

, Makhija does not anticipate claim 5.

Claim 15:

Claim 15 recites, among other limitations, “the battery control circuit according to any one of claims 1, 2, 3, 5 ,6, 8, 10 and 13, wherein operating power is supplied from said battery.” The Examiner asserted that Makhija discloses this limitation at FIG. 6 and 11:33-41.

However, the electronic device, as claimed, is a device powered by a battery that performs other processes as well as a process of determining the condition of the battery. In contrast, the tester device 20 of Makhija is a device that performs only a process of determining the condition of the battery.

Since Makhija does not disclose, either expressly or inherently, ““the battery control circuit according to any one of claims 1, 2, 3, 5 ,6, 8, 10 and 13, wherein operating power is supplied from said battery”, Makhija does not anticipate claim 15.

By virtue of its dependency from claim 15, claim 16 is not anticipated Makhija.

Therefore, it is respectfully requested that the rejection should be withdrawn.

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Conclusion

It is submitted, however, that the independent and dependent claims include other significant and substantial recitations which are not disclosed in the cited references. Thus, the claims are also patentable for additional reasons. However, for economy the additional grounds for patentability are not set forth here.

In view of all of the above, it is respectfully submitted that the present application is now in condition for allowance. Reconsideration and reexamination are respectfully requested and allowance at an early date is solicited.

The Examiner is invited to call the undersigned attorney to answer any questions or to discuss steps necessary for placing the application in condition for allowance.

Respectfully submitted,

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